

## CLAIMS

What is claimed is:

1. A method of managing memory, comprising:
  - issuing a data request to remove data;
  - determining whether the data is being removed from a cache line in a cache memory;
  - determining whether the data being removed is stack data; and
  - varying the memory management policies depending on whether the data being removed corresponds to a predetermined word in the cache line.
2. The method of claim 1, wherein the predetermined word is the first word in the cache line.
3. The method of claim 2, wherein the cache line is invalidated.
4. The method of claim 2, wherein the cache line holding the stack data is queued for replacement by a replacement policy when a read hit occurs on the first word of the cache line.
5. The method of claim 4, wherein the replacement policy is a least recently used (LRU) policy.
6. The method of claim 1, wherein the predetermined word is the last word in the cache line.
7. The method of claim 1, wherein the cache line is a dirty cache line.

8. The method of claim 7, further comprising, invalidating the dirty cache line if the predetermined word in the dirty cache line is the first word.

9. A system, comprising:

a memory;

a controller coupled to the memory;

a stack that exists in the memory;

wherein the memory further comprises a cache memory and a main memory; and

wherein the controller adjusts its management policies depending on whether data that is being removed corresponds to a predetermined word in a cache line.

10. The system of claim 9, wherein the predetermined word is the first word in the cache line.

11. The system of claim 10, wherein the cache line is invalidated.

12. The system of claim 11, wherein the invalidated cache line is queued for replacement by a replacement policy.

13. The system of claim 12, wherein the replacement policy is LRU.

14. The system of claim 9, wherein the predetermined word is the last word in the cache line.

15. The system of claim 9, wherein the cache line is a dirty cache line.

16. The system of claim 15, wherein the dirty cache line is invalidated if the predetermined word in the dirty cache line is the first word.